UNITED STATES ENVIRONMENTAL PROTECTION AGENCY 36855
REGION II

DATE: JUN 13 19[illegible]

SUBJECT: Request for Confirmation of a Ceiling Increase; a Twelve-Month Exemption; and Confirmation of the Initial Verbal Approval for Funding the Removal Action at the New Vernon Road Site, Meyersville, Morris County, New Jersey - **ACTION MEMORANDUM**

FROM: Michael Neill, On-Scene Coordinator
Removal Action Branch

TO: Constantine Sidamon-Eristoff
Regional Administrator

Kathleen C. Callahan, Director
Emergency and Remedial Response Division

Site I. D. - 6G
Category of Removal - Emergency
National Significance - Yes (asbestos primary contaminant)

I. PURPOSE

Friable and free asbestos in large quantities have been found on the New Vernon Road National Priority List (NPL) site, a satellite site to the Asbestos Millington New Jersey NPL site. During an August 1990 site inspection, the Environmental Protection Agency (EPA) site evaluation team observed white material in the driveway, on and in the floor of a nearby cowshed, and in a landfill area to the rear of the property. Subsequent sampling from the driveway revealed 5% asbestos present. Sampling from a vacuum cleaner bag at the residence located on-site showed that 2% asbestos was present in dust samples.

As a result of these findings, the Agency for Toxic Substances and Disease Registry (ATSDR) verbally issued a preliminary health consultation, followed by a memorandum, advising EPA to temporarily relocate residents at the New Vernon Road site. Subsequently, an addendum to ATSDR's April 1989 Health Assessment was issued. ATSDR issued a preliminary Public Health Advisory in September 1990, and a final Public Health Advisory on December 20, 1990 for this site. ATSDR has indicated that steps should be taken to reduce the exposure to the asbestos dust at the entrance driveway, remove any other free sources of asbestos, perform further sampling on nearby residences, and dissociate humans from free asbestos at the site. The Removal Site Evaluation and the ATSDR documents are attached.

On August 23, 1990, verbal approval was given, by the Region II Director of the Emergency and Remedial Response Division (ERRD), to initiate activities necessary to protect all persons from exposure to asbestos at the site. Concurrence was also received from Headquarters since asbestos is the primary contaminant at the site. The initial Project Ceiling was established at $249,000 with $200,000 in mitigation contracting and $49,000 set

aside for Technical Assistance Team (TAT) and EPA costs. On September 13, 1990, verbal approval was given by William Muszynski, Deputy Regional Administrator, to raise the project ceiling to $900,000 to complete initial removal actions. The authority for this approval comes from the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as delegated to the EPA regional offices.

By this memorandum, these approvals are confirmed. The increase in funds was necessary since the extent of contamination to be addressed was found to be considerably larger than originally estimated. In addition, TAT and EPA costs increased since the owner/residents declined to be relocated at the time of the removal action and therefore, special consideration and planning was required. The new mitigation contracting amount is $415,000; TAT cost is $220,000; and EPA cost is $225,000. An Interagency Agreement (IAG) for resident and business temporary relocation with the Army Corps of Engineers has been executed for $40,000. The new project ceiling is $900,000.

Since uncertainty exists when all actions can be considered complete, and other actions may have to be taken at different times over the project period, an exemption to the twelve-month time limitation is also requested.

II. SITE CONDITIONS AND BACKGROUND

The Asbestos Dump Superfund site is an NPL site comprised of four subsites. The "main" site is known as the Millington site and is currently being remediated as Operable Unit 1. There are three "satellite" sites known as the New Vernon Road site, the White Bridge Road site and the Deitzman Tract. The New Vernon Road and the White Bridge Road sites comprise Operable Unit 2. The Deitzman Tract comprises Operable Unit 3. Removal actions, one of which is the subject of this memorandum, were initiated in 1990 at the New Vernon Road and White Bridge Road sites.

The New Vernon Road site is located at 237 and 257 New Vernon Road, Meyersville, Morris County, New Jersey. It consists of approximately 30 acres and is bounded by New Vernon Road, and the Great Swamp National Wildlife Refuge. Across the street, to the east, is the Meyersville Swim and Tennis Club (part of which is housed in a large air filled bubble for protection against the weather). There are two adult residents with their two young children living on-site. A tenant previously resided at the home located on-site, but has relocated. The residents operate a landscaping business from a building located on-site. There are other private residences to the north and west of the site (see Figure 1).

A. Incident History

The land which comprises the site was used as a corn and dairy farm from 1945 to 1980. In the late 1960's, for a period of

three years (1968-1971), landfilling operations were performed, utilizing asbestos containing materials (broken tiles, pipe, and other loose asbestos refuse), generated by the National Gypsum Gold Bond Division plant in Millington, New Jersey. A depression in the northwestern corner was filled as well as a larger depression in the middle of the property. After the property was purchased by the current residents in 1980, it was graded, seeded and other improvements were made.

A CERCLA Section 106 Order, issued on April 4, 1985, required the National Gypsum Company, a potentially responsible party (PRP), to perform a Remedial Investigation/Feasibility Study (RI/FS) on areas suspected of having been impacted by the asbestos waste materials from the Millington facility, including the New Vernon Road site.

Subsequent to the issuance of the Order, it was deemed appropriate to split remedial activities into operable units. The Millington site is Operable Unit 1. EPA has selected a remedy for this portion of the site which is set forth in a September 1988 Record of Decision. Operable Unit 2 of the site is comprised of the two satellite sites which are also residential properties; the New Vernon Road and the White Bridge Road sites. The third satellite site, known as the Deitzman Tract, comprises Operable Unit 3 of the site.

In April 1989, ATSDR issued a Health Assessment for the site which recommended, among other things, that additional sampling be performed at the site. In August 1990, based on ATSDR's recommendations, and as part of the NPL site assessment effort, the Removal Action Branch collected and analyzed soil and dust samples. The sampling program was performed with the Environmental Response Team (ERT). Initial sampling indicated the presence of 5% asbestos in a sample collected in the driveway, 5% asbestos in soil collected under a shed located on-site, and 2% asbestos in the dust collected from the on-site resident's vacuum cleaner bag. Due to the high levels of asbestos, EPA determined that an immediate removal action was necessary to address the imminent threat posed by the site. The removal action was initiated based on verbal authorization by the Director of ERRD.

The removal action was initiated in August 1990. The removal activities performed to date include: making provisions to temporarily relocate site residents (the temporary relocation was rejected by the residents); capping two driveways on-site with asphalt to cover asbestos containing material (ACM); removing ACM from a dilapidated shed located next to the driveway and demolishing the shed; decontaminating the living structures on-site; collecting and analyzing air samples from the residence to confirm decontamination; visually inspecting the lawn area and bagging asbestos chips located on the ground surface for off-site

disposal; covering primary areas of with ACM (other than the main driveway, which was paved) with geotextile fabric to restrict access and reduce the potential for airborne releases; and, erecting signs and temporary fencing to restrict access to areas with surface contamination.

The residents temporarily relocated the on-site business and on specific days vacated the property to allow the removal activities to proceed.

An IAG has been entered into with the Army Corps of Engineers to support the relocation process, if necessary.

The removal action served to stabilize and temporarily reduce the risks due to exposure of asbestos by site residents and others. During the fall of 1990, concurrent with the removal action, EPA initiated a remedial investigation (RI). This RI included extensive soil and air sampling at the site in order to characterize site contamination. To minimize the disturbance of asbestos, the RI sampling was performed prior to the placement of the geotextile fabric over areas of asbestos contamination.

The data collected during the RI has characterized the nature and extent of asbestos contamination at the site, and is currently serving as a basis for selection of a final remedy. This remedy will be documented in a subsequent Record of Decision.

B. Quantities/Types of Substances Present

The New Vernon Road site contains asbestos waste in landfill areas in the vicinity of the private residence, in the main landfill area in the eastern section of the property, along the former driveway (now paved) that traverses north-south along the middle of the property, and in the area of the former shed located near the main residence. The thickness of asbestos waste ranges from 0 to 8 feet. An estimated 15,760 cubic yards of asbestos waste is present on the site.

Samples collected on August 2, 1990 from the driveway and vacuum cleaner bag used in the main residence, were analyzed by Transmission Electron Microscopy (TEM), and found to contain 5% and 2% chrysotile asbestos, respectively.

Asbestos, when it is friable, is designated as a CERCLA hazardous substance under 40 CFR Table 302.2. The term "friable" means that the material can easily be crumbled by hand, and therefore, is likely to emit fibers into the air.

C. Site Conditions

Asbestos has been found in various surface and subsurface areas on the site. Weathering has made the material friable and the

action of vehicles using the driveways, prior to paving, had pulverized the tile chips into dust, resulting in a major health threat. Construction, grading, planting, and other activities performed by the site owner has spread the asbestos material on the property.

III. THREAT

An April 1989 ATSDR Health Assessment stated that since the potential exists for the transport of appreciable levels of asbestos into the air, the potential exists for significant exposure to asbestos at concentrations of immediate public health concern. An August 29, 1990 ATSDR memorandum to the Region states that an immediate and significant health threat exists and actions should be taken to abate the threat. An addendum to the original health assessment, confirming the health threat, was issued on September 14, 1990. A Health Advisory, based on the addendum, was issued by ATSDR on December 20, 1990. This Health Advisory included a number of recommendations including that: affected residents be dissociated from asbestos fibers in indoor air; additional sampling be performed; and access to asbestos contaminated areas be restricted.

Since the probability exists for asbestos fibers to become airborne and continue to do so unless mitigative measures are taken, a major health threat exists at this site.

The most significant pathway by which airborne asbestos affects humans is through the respiratory system. Asbestos exposure may cause two primary classes of health effects. The first is asbestosis, a non-malignant disease characterized by a progressive scarring of the lungs and pleura. This condition progresses very slowly over many years, and may continue even after the exposure has ceased. As microscopic scarring builds up, the lungs become stiff and restrict breathing. The other major class of asbestos-related health effect is mesothelioma, a type of lung cancer, which may occur even after apparently trivial exposure to the asbestos. All asbestos-related malignancies have a latency period. There usually is a considerable time interval between the exposure and when the adverse effects are seen. This latency period may vary from ten to forty years, although some cases have been documented where the effects were seen even after a short term exposure and latency period.

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances from this site, if not addressed by the implementation the response action selected in this Action Memorandum, presented an imminent and substantial endangerment to public health or welfare.

V. EXEMPTION FROM STATUTORY LIMITS

The New Vernon Road site meets the following criteria, as prescribed in CERCLA Section 104(c)(1)(C), which is required to exceed the twelve-month time limit for removal actions:

> The continued response actions are otherwise appropriate and consistent with the remedial actions to be taken.

Extensive coordination and close monitoring of activities with the Remedial Program and the Office of Regional Counsel has ensured that the public has been protected during the removal action. Actions taken were consistent and appropriate with long term solutions to this immediate health threat. Removal activities were coordinated with RI sampling.

In addition, the response actions implemented are appropriate under Section 104(c)(1)(C) of CERCLA, as amended by the Superfund Amendments and Reauthorization Act (SARA), since the following criteria have been met:

A. Consistency

Asbestos abatement measures at this site consisted of posting signs, temporarily covering the exposed asbestos areas by paving the driveways and by covering other areas with geotextile fabric, dismantling the shed and covering the area beneath the shed with geotextile fabric, and High Efficiency Particulate Air filter (HEPA) vacuuming of the dwelling. A minimal amount of material (asphalt used in paving) was added to the site. All activities were closely coordinated with the Remedial Program and consideration was given to the final remedial action. Actions undertaken to date are similar to those at like sites in other regions.

B. Appropriateness

ATSDR issued a Health Advisory on December 20, 1990. The Health Advisory for this site calls for:

- dissociating humans from free/friable asbestos;
- additional sampling;
- posting warning signs;
- restricting access to known areas of asbestos contamination; and,
- eliminating activities which could cause the asbestos to become airborne.

The removal action accomplished these goals in an expeditious manner, including reducing the possibility of further off-site migration through runoff or erosion caused by air motion. The measures taken during the removal action have stabilized the site

through temporary measures. The geotextile fabric and asphalt cap, which cover the major areas of asbestos contamination, will be maintained until a permanent remedy is constructed at the site.

VI. REMOVAL ACTIVITIES

The removal activities to date include: making provisions to temporarily relocate site residents (the temporary relocation was rejected by the residents); capping two driveways on-site with asphalt to cover asbestos containing material (ACM); removing ACM from a dilapidated shed located next to the driveway and demolishing the shed; decontaminating the living structures on-site; collecting and analyzing air samples from the residence to confirm decontamination; visually inspecting the lawn area and bagging asbestos chips located on the ground surface for off-site disposal; covering primary areas of with ACM (other than the main driveway, which was paved) with geotextile fabric to restrict access and reduce the potential for airborne releases; and, erecting signs and temporary fencing to restrict access to areas with surface contamination.

The action required the temporary relocation of the residents and the on-site business. The structures on-site were decontaminated by HEPA filter vacuuming and other procedures as was necessary.

VII. SUMMARY OF COSTS

Summary of Costs	Current Ceiling	Proposed Ceiling
Extramural Costs		
ERCS	$ 200,000	$ 415,000
IAG	--	$ 40,000
ERT	--	--
TAT	$ 30,000	$ 220,000
Total Extramural Costs	$ 230,000	$ 675,000
Total Intramural Costs	$ 19,000	$ 225,000
PROJECT CEILING	$ 249,000	$ 900,000

VIII. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

The proposed actions were taken based, in part, on the ATSDR's Health Advisory. Had the actions not been taken, the residents and any person entering the site, or coming near the site, could have potentially been exposed to free asbestos fibers and been at risk of diseases caused by exposure to these fibers.

IX. ENFORCEMENT

National Gypsum Company has been identified as a PRP for the Asbestos Dump site. An Order was issued in 1985 to National

Gypsum for the performance of RI/FS activities at the site, including the three satellite sites. In 1987, National Gypsum submitted an RI/FS report which documented RI/FS activities at the sites. At that time, EPA determined that adequate information was presented to select a final remedy for the Millington portion of the site, but that additional investigation was necessary to fully characterize the three satellite sites, including the New Vernon Road site, prior to selection of final remedies.

Subsequently, upon determining that a substantial threat existed at the New Vernon Road and White Bridge Road sites, based on 1990 sampling, EPA performed the removal action described above.

X. RECOMMENDATIONS

Conditions at the New Vernon Road site continue to meet the criteria for a CERCLA removal action under 40 CFR 300.415, in that a release of a hazardous substance to the environment has occurred and could continue to occur. Qualifying criteria include the following:

(b)(2)(i)- Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants;

(b)(2)(iv)- High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate;

(b)(2)(v)- Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released;

(b)(2)(vii)- The availability of other appropriate federal or state response mechanisms to respond to the release;

(b)(2)(viii)- Other situations or factors that may pose threats to public health welfare or the environment.

Therefore, I request your approval to confirm the original project ceiling and the new project ceiling. The new project ceiling is $900,000. Of this amount, $415,000 is for mitigation contracting, $40,000 is for an IAG to temporarily relocate the residents and business, if necessary and $445,000 is for TAT and EPA costs.

My signature below confirms the original verbal approval of the $249,000 project ceiling:

Approved: _____ Date: 7/5/91

Kathleen C. Callahan, Director
Emergency and Remedial Response Division

There were sufficient monies in the Fiscal Year 1990 Advice of Allowance to fund this project.

Please indicate your approval and authorization of funds for the New Vernon Road site actions by signing below.

Approved: _____ Date: 7/9/91
Constantine Sidamon-Eristoff
Regional Administrator

Disapproved: _____ Date: _____
Constantine Sidamon-Eristoff
Regional Administrator

By my signature below, I approve an exemption to the twelve-month time limitation for the New Vernon Road site:

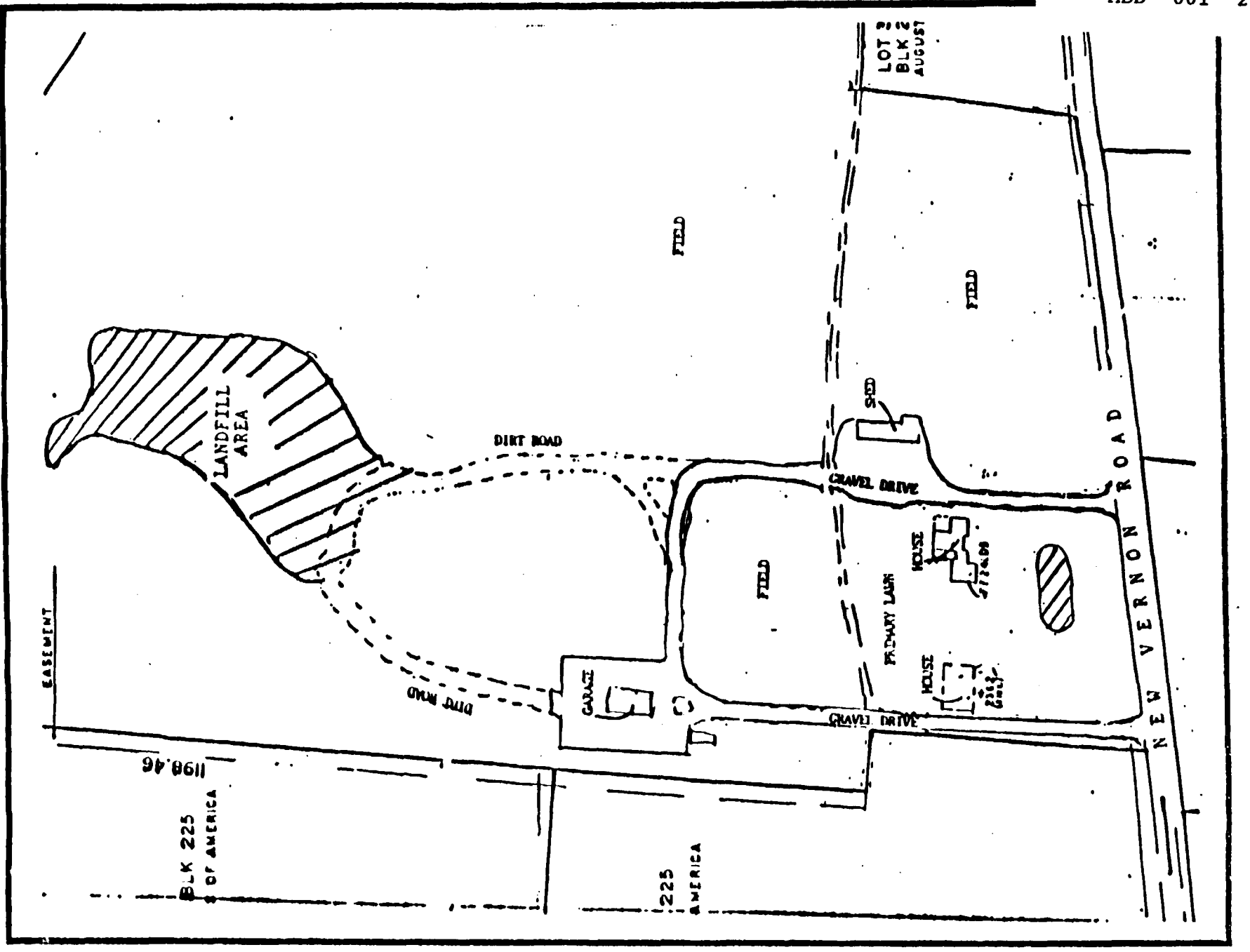
Approved: _____ Date: 7/5/91
Constantine Sidamon-Eristoff
Regional Administrator

Disapproved: _____ Date: _____
Constantine Sidamon-Eristoff
Regional Administrator

Attachments

cc: (after approval is obtained)
C. Sidamon-Eristoff, RA
K. Callahan, 2ERR
R. Salkie, ADREPP
G. Zachos, 2ERR-RAB
J. Frisco, 2ERR-DD
R. Basso, 2ERR-NJSB
J. Marshall, 2OEP
D. Karlen, 2ORC-NJSUP
R. Gherardi, 2OPM-FIN
S. Anderson, PM-214F
S. Luftig, OS-210
L. Miller, NJDEP
C. Moyik, 2ERR-PS
J. Rosianski, 2OEP
T. Grier, OS-210
T. Mignone, TATL

NEW VERNON ROAD SITE MAP



DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Agency for Toxic Substances
and Disease Registry
Atlanta GA 30333

DEC 20 1990

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Mr. Constantine Sidamon-Eristoff
Regional Administrator
U.S. Environmental Protection Agency
Region II
Jacob K. Javitts Federal Building
New York, New York 10278

Dear Mr. Sidamon-Eristoff:

This letter is in reference to an enclosed Public Health Advisory for current and potential exposures to hazardous wastes, specifically chrysotile asbestos, at the New Vernon Road Site and the White Bridge Road Site in Meyersville, Passaic Township, New Jersey. These two sites are subsites of the Asbestos Disposal Sites NPL Site in Millington, New Jersey.

The Agency for Toxic Substances and Disease Registry (ATSDR) reviewed the analytical results of air, soil, and residential dust sampling at these sites. These samples were collected by the U.S. Environmental Protection Agency (EPA) beginning in August 1990. The initial results indicated that soil at two subsites contained high concentrations of chrysotile asbestos (5 percent by volume) and at least one dwelling was contaminated by high levels of chrysotile asbestos (2 percent by volume). The Advisory is not applicable to any other subsite associated with this NPL site.

The enclosed Public Health Advisory expresses our concerns and addresses measures to mitigate the risk to human health. By separate letter, Dr. William L. Roper, ATSDR Administrator, has notified the EPA Administrator of this Advisory.

Sincerely yours,

Barry L. Johnson

Barry L. Johnson, Ph.D.
Assistant Surgeon General
Assistant Administrator

Enclosure

AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY
DIVISION OF HEALTH ASSESSMENT AND CONSULTATION
PUBLIC HEALTH ADVISORY

ASBESTOS DISPOSAL SITES NPL SITE
NEW VERNON ROAD SUBSITE AND
WHITE BRIDGE ROAD SUBSITE

PASSAIC TOWNSHIP, MORRIS COUNTY, NEW JERSEY

December 20, 1990

INTRODUCTION

The U.S. Environmental Protection Agency (EPA), Region II, conducted soil and dust sampling for asbestos at subsites of the Asbestos Disposal Sites in Meyersville, New Jersey, as part of a program designed to assess the need for removal actions at NPL Sites. Based on the analytical results of that sampling, the Agency for Toxic Substances and Disease Registry (ATSDR) has determined that contamination at the New Vernon Road Site and the White Bridge Road Site presents a public health concern. This Public Health Advisory is issued to notify the EPA, the New Jersey State Department of Health, and the public that the presence of asbestos at these two subsites represents an imminent and substantial threat to human health.

The health threat results from chrysotile asbestos contamination in the soil and in the homes located on these two sites. The risk of exposure to free asbestos fibers is increased for the residents of any home in the general area which is contaminated with site-related asbestos. Persons who work at or visit these sites may also be at increased health risk because of the potential for exposure to free asbestos fibers at concentrations above background. Background implies levels of asbestos detected in similar rural areas remote from the source of site-related asbestos.

Chrysotile, the substance of health concern in these homes, is one of a group of naturally occurring fibrous silicate minerals, generally referred to as asbestos. The ATSDR considers the different mineral forms of asbestos to be known human carcinogens with a prolonged latency period of between 10 and 30 years between exposure and the onset of disease. Adverse health effects can occur after an exposure of limited duration. Health effects are known to occur after inhalation of asbestos fibers and may occur through ingestion of asbestos fibers. [2,3]

Potential health effects include: asbestosis (a physical injury of the lung tissue caused by the asbestos fibers); lung cancer; mesotheliomas (malignant tumors formed within the thin membrane surrounding internal organs, primarily caused by exposure to asbestos); and, gastrointestinal cancer, including the colon and esophagus. [3]

Because of the known carcinogenicity of asbestos and the likelihood of exposure at these sites, ATSDR recommendations include: (1) residents in on-site homes known to be contaminated with free asbestos fibers be dissociated from the contamination existing as free fibers; (2) buildings, including the dwellings, adjacent to these two sites be sampled for free asbestos fibers, and, if fibers are found at

comparable concentrations to the on-site dwellings, the occupants be dissociated from the contamination; (3) activities at the sites that would increase airborne particulates be restricted at areas where asbestos contamination is known to exist; (4) the homes of employees of the businesses at these sites be sampled for free asbestos fibers, and, if fibers are found at concentrations comparable to the on-site dwelling, the workers and their families be dissociated from the contamination. The EPA Region II is aggressively implementing these recommendations and has substantially reduced the concentrations of the asbestos fibers in one of the dwellings at the New Vernon Road Site.

The purposes of this Public Health Advisory are to notify the EPA, the New Jersey State Department of Health, and the public of the substantial human health hazard at these sites, and to bring to their attention ATSDR's concerns and recommendations for the protection of the public health.

BACKGROUND

The ATSDR received a request from EPA Region II for an evaluation of the health hazard posed by asbestos contamination in the soil and in one dwelling at the New Vernon Road Site. The contamination was found through a sampling event conducted as part of a removal assessment program of NPL sites. The sampling was conducted by EPA Region II in August 1990 at two of the subsites associated with this site: New Vernon Road Site and White Bridge Road Site.

Analysis of the samples, according to an analytical method for determining bulk asbestos content, revealed a maximum concentration of 5 percent by volume chrysotile asbestos in the soil and 2 percent by volume in a residential vacuum cleaner bag. All 12 samples collected contained at least 2 percent by volume chrysotile. In making conclusions based on data obtained from vacuum cleaner bag samples, the following factors should be considered:

- The concentration of asbestos in the vacuum bag may reflect higher or lower concentrations than are actually present in the home.
- Although primarily used in the household, many vacuum cleaners are used elsewhere (e.g., cleaning the interior of a car). This introduces other sources of contamination which may skew the analytical results.
- During vacuuming, some fibers may pass through the bag and be exhausted into the ambient air of the home. Thus, vacuuming may increase the potential for exposure by increasing the number of fibers in the air in the breathing zone.

In September 1990, sampling of household dust by EPA Region II in the homes on-site and in some adjacent homes confirmed the presence of free asbestos fibers. At least one sample from each home contained detectable asbestos fibers. The levels detected were below quantification levels for the analytical methods used.

Indoor air samples collected in October 1990 allowed for a comparison of the levels of asbestos found in the home at the New Vernon Road Site to levels of asbestos present in control homes, which would be considered background concentrations. At the recommendation of ATSDR, EPA selected two homes which were representative of homes in the area of the subsites, but known to be unassociated with site-related asbestos (control homes). These two homes were sampled as was the dwelling on the New Vernon Road Site. Preliminary results indicate that no asbestos particulates or fibers were present in the control homes. The samples from the New Vernon Road Site contained a total concentration of asbestos fibers of 3000 fibers per cubic meter (f/m^3) [0.0003 fibers per cubic centimeter (f/cc)]. Characterization of the New Vernon Road samples showed that the concentration of fibers over 5 micrometers (um) in length was 0.0013 f/cc or 1300 f/m^3. [11]

Following this round of air sampling, a removal action was completed in the dwelling and the air was resampled. Results indicated a concentration of 1900 f/m^3. The samples from the control homes were collected using a passive technique (i.e., normal household activities) while the air sample in the dwelling was collected using an aggressive technique (e.g., fans or blowers agitated the dust and fibers). The control samples are, therefore, indicative of normal exposures, while the dwelling sample is indicative of worst case exposures. [10]

The New Vernon Road Site consists of approximately 30 acres of land and two dwellings off New Vernon Road in Meyersville, New Jersey, in Passaic Township. In the late 1960s, asbestos refuse from an asbestos processing plant in Millington was placed in landfills on the site at two separate locations. These locations are now called the filled pond area and the main landfill area. The refuse consisted of loose asbestos fibers, broken asbestos tiles, and broken asbestos siding.

The White Bridge Road Site consists of approximately 12 acres and one dwelling in Meyersville. The site is now a horse farm. From 1970 to 1975, wastes similar to those disposed at the New Vernon Road Site were placed in a landfill in the eastern portion of the site in and around what has become a riding track.

Both the White Bridge Road Site and the New Vernon Road Site are located in a primarily rural area. A combined total of 15-20 off-site residences are potentially impacted by any migration of the wastes from the two sites. This number of potentially-impacted residences is based on the observations of the ATSDR Regional Representative over the course of several site visits and includes the homes of the employees of the businesses on these sites. Additional site descriptive information and demographics can be found in the Health Assessment. [1]

On the New Vernon Road Site, the property owner operates a tree surgery business which is reported to employ between three and four persons. These employees may be exposed to the asbestos on-site in the course of their employment. This exposure is likely to be less than 2 hours per day since most of the employees' tasks are off-site. On the White Bridge Road Site, a stable and riding track for horses is operated by the property owner. Two to three employees and, to a

lesser extent, an unknown number of customers may be exposed to asbestos on-site while grooming and handling the horses, especially in the area of the riding track.

Chrysotile is one of a group of six naturally occurring fibrous silicate minerals generally referred to as asbestos. Asbestos is a known human carcinogen and is one of the primary causes of mesothelioma. Mesotheliomas are tumors arising from the thin membrane surrounding internal organs. Inhalation of asbestos fibers can lead to fibrotic lung disease (asbestosis), cancer of the lung, the pleura, and the peritoneum. There is some evidence that inhalation and ingestion of asbestos fibers may lead to an increased risk of gastrointestinal cancer. However, chrysotile has been shown to cause all of the adverse health effects associated with asbestos exposure. [2,3]

There is a substantial latency period of between 10 and 30 years between the exposure and the occurrence of apparent adverse health effects. Some human and animal studies have indicated that adverse health effects can occur after exposures of limited duration. In order for exposure to occur, the asbestos must exist as free fibers capable of becoming airborne. [2,3]

The length and diameter of fiber is important in determining the ultimate effect of the exposure. For instance, fibers less than 0.5 micrometers in diameter are those most active in producing tumors. [2] The ATSDR considers all mineral forms of asbestos, including chrysotile, to be a hazard to human health, based on human epidemiological studies and animal studies.

To date, exposure to all concentrations of asbestos fibers have demonstrated an excess cancer risk. [2,3] A marked enhancement of the risk of lung carcinoma in exposed workers or populations who also smoke cigarettes has been noted in human epidemiology studies. [2,3] The ATSDR Toxicological Profile for Asbestos indicates the increased risk associated with smoking may be as high as ten times the risk for nonsmokers.

Ambient concentrations of asbestos in urban areas have been reported to be less than 100 nanograms total asbestos per cubic meter of air (ng/m^3). [9] In one study described on page 75 of NIOSH's document, Revised Recommended Asbestos Standard, the concentration of asbestos in a building insulated with asbestos averaged 6,000 fibers of chrysotile per cubic meter of air. [2; Nicholson, Rohl, and Weisman, 1975] In another study completed later and described on page 82 of ATSDR's Draft Toxicological Profile for Asbestos, asbestos in indoor air was reported in the range of 20 to 6,000 fibers of asbestos per cubic meter. Ambient air concentration in rural settings across the country range from 1 to 3 orders of magnitude smaller than indoor air. [3; Nicholson, 1987] The ATSDR considers that a mass of 1 nanogram of asbestos may contain a sufficient number of fibers to create a health threat.

BASIS FOR ADVISORY

There is ample opportunity for human exposure to chrysotile asbestos at the New Vernon Road Site and the White Bridge Road Site. The owners of both these sites spend a great deal of time in the outdoors, either at the stables or working with equipment, and children play outdoors on the New Vernon Road Site. The activities of the residents and their customers may lead to suspended asbestos particulates in the air, thereby creating a better opportunity for exposure.

Asbestos contamination can be brought into the home as well. Studies indicate that asbestos workers have carried contamination home on their clothing and on their person. [3] In the situation at these sites, it is possible that children and pets which frequent the site may also carry contamination into the home.

The ATSDR considers the high concentration of asbestos in the soil outside the homes on the site to represent a serious hazard to the occupants' and the general public's health. Continued exposure to free asbestos fibers at concentrations present at these sites represents an imminent and substantial health hazard to exposed individuals.

CONCLUSIONS

Residents in homes at this site with free asbestos fibers face an imminent and substantial health hazard from exposure to asbestos. Workers at the New Vernon Road Site and workers and customers at the horse farm and riding stables at the White Bridge Road Site may also encounter asbestos contamination and face an increased risk of developing adverse health effects. The families of these workers and customers will be at risk if the free asbestos fibers are taken into their residential environments.

RECOMMENDATIONS AND PROPOSED ACTIONS

The ATSDR will consult with the New Jersey State Department of Health on actions needed to address asbestos contamination that is not related to the NPL Site known as the "Asbestos Disposal Sites." The ATSDR, in consultation with the New Jersey State Department of Health, will develop exposure-based criteria to identify residents at risk of adverse health effects associated with these subsites. The two agencies will make a medical monitoring program available to those residents identified. A health education program for the community will be made available as well.

In addition, ATSDR recommends the following actions be taken to mitigate the health hazard associated with asbestos contamination at the New Vernon Road Site and the White Bridge Road Site:

1. The EPA should dissociate affected residents, either on-site or off-site, from exposure to the site-related asbestos fibers in indoor air.

2. Additional sampling should be performed by the EPA to determine the extent of off-site migration.

3. Additional sampling for the presence of asbestos should be performed by EPA to determine if workers and customers of the affected businesses are being exposed. Initially, this sampling should be targeted at areas frequented by those workers and customers who are physically on-site for at least 40 hours per week. The sampling should include their homes. The targeting is recommended due to the longer exposures of these individuals. Additional sampling of individuals with shorter exposures may become necessary based on an evaluation of these initial results.

4. If rural New Jersey background levels of asbestos are not already available from State agencies, a concurrent sample to those already recommended should be collected in a maximum of three homes of similar construction in a rural setting in New Jersey. The ATSDR will accept these control samples as indicative of rural background asbestos concentrations in that part of New Jersey.

5. The EPA or the property owners should restrict access, authorized or unauthorized, to those areas known or suspected to be contaminated with asbestos. This restriction applies to workers, residents, and customers.

6. The EPA or the property owners should reduce or eliminate activities that would increase airborne particulates in those areas known or suspected to be contaminated with asbestos.

7. If Recommendations 5 and 6 cannot be implemented, EPA should post warning signs in the vicinity of the horse track at the White Bridge Road Site to advise customers of the asbestos-related hazards at the site.

For additional information, please contact ATSDR at the following address:

Robert C. Williams, P.E.
Director, Division of Health Assessment and Consultation
Agency for Toxic Substances and Disease Registry
1600 Clifton Road, NE, MS E-32
Atlanta, Georgia 30333
(404) 639-0610
FTS 236-0610

REFERENCES

1. Health Assessment for Asbestos Disposal Site. Prepared by Agency for Toxic Substances and Disease Registry. April 10, 1989.

2. Revised Recommended Asbestos Standard. Prepared by National Institute for Occupational Safety and Health. December 1976.

3. Draft Toxicological Profile for Asbestos. Prepared by Agency for Toxic Substances and Disease Registry. February 16, 1990.

4. Excerpts from Sampling Report: New Vernon Road Site and White Bridge Road Site, Asbestos Dump Sites. Prepared by Fred C. Hart Associates, Inc., Subcontractor to Roy F. Weston, Inc. Prepared for: U.S. Environmental Protection Agency, Region II. Undated.

5. Conference call between Agency for Toxic Substances and Disease Registry, Division of Health Assessment and Consultation, Emergency Response and Consultation Branch (ERCB); Public Health Advisor, Agency for Toxic Substances and Disease Registry, Region II; and, New Jersey Department of Health. August 21, 1990. Refer to ERCB Superfund Record of Communication dated August 27, 1990.

6. Conversation between Mr. Richard Nickle, Agency for Toxic Substances and Disease Registry and Mr. William Howard, Centers for Disease Control. August 30, 1990. Refer to ATSDR Superfund Record of Communication dated August 31, 1990.

7. Conversation between Mr. Richard Nickle, Agency for Toxic Substances and Disease Registry and Mr. Raymond McQueen, National Asbestos Council. August 30, 1990. Refer to ATSDR Superfund Record of Communications dated August 31, 1990.

8. Facsimile transmission of preliminary analytical data. Transmitted by: Mr. Arthur Block, Public Health Advisor, ATSDR Regional Services, Region II, Agency for Toxic Substances and Disease Registry, New York. Transmitted to: Mr. Richard Nickle, Division of Health Assessment and Consultation, Emergency Response and Consultation Branch, Agency to Toxic Substances and Disease Registry. August 5, 1990.

9. Fifth Annual Report on Carcinogens: Summary 1989 (NTP 89-239). Prepared for the National Institute of Environmental Health Sciences, U.S. Public Health Service, U.S. Department of Health and Human Services. Prepared by: Technical Resources, Inc., Rockville, Maryland.

10. Telephone conversations between Mr. Arthur Block, Ms. Nicki DiForte, and Mr. Richard Nickle concerning air sampling results. Conversation 10/24 and 10/25, 1990. Referred to ATSDR Superfund Record of Communications dated 10/25/90.

11. New Vernon Residential Asbestos Air Investigation: Meyersville, New Jersey. Prepared for the EPA/U.S. EPA Environmental Response Team (ERT). Prepared by ERT's REAC contractor, Edison, New Jersey. No date.

John

FAX Dick Salkie

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Comments due to Art on Monday

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AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY
DIVISION OF HEALTH ASSESSMENT AND CONSULTATION
PUBLIC HEALTH ADVISORY

ASBESTOS DISPOSAL SITES NPL SITE
NEW VERNON ROAD SUBSITE AND
WHITE BRIDGE ROAD SUBSITE

PASSAIC TOWNSHIP, MORRIS COUNTY, NEW JERSEY

September 21, 1990

INTRODUCTION

As a result of a recommendation in a Health Assessment of the Asbestos Disposal Sites, the U.S. Environmental Protection Agency (U.S. EPA) conducted soil and dust sampling for asbestos at the Asbestos Disposal Sites ~~near~~ in Meyersville, New Jersey. Based on the analytical results of that sampling, the Agency for Toxic Substances and Disease Registry (ATSDR) has determined that the New Vernon Road Site and the White Bridge Road Site represent an imminent and substantial threat to public health. The source of this threat is the asbestos contamination that has been found in the soil and in the homes located on these two sites. The risk of exposure to asbestos is increased for the residents in any home contaminated with free asbestos fibers. Asbestos is a known human carcinogen with a prolonged latency period of between ten and thirty years between exposure and the onset of disease. Adverse health effects may occur after an exposure of limited duration. Health effects are known to occur after inhalation of asbestos fibers and may occur through ingestion

of asbestos fibers.

Potential health effects include: asbestosis, a physical injury of the lung tissue caused by the asbestos fibers; lung cancer; mesotheliomas, tumors formed within the thin membrane surrounding internal organs, primarily caused by exposure to asbestos; and, gastrointestinal cancer, including the colon and esophagus.

Because of the known carcinogenicity of asbestos and the likelihood of exposure at these sites, the ATSDR recommends that: residents in homes known to be contaminated with asbestos be dissociated from the contamination existing as free fibers; dwellings adjacent to these two sites be sampled for free asbestos fibers and, if found, the residents be dissociated from the contamination; activities at the sites which tend to increase airborne particulates be restricted to areas where asbestos contamination is known not to exist; the homes of workers at these sites be sampled for free asbestos fibers and, if found, the workers and their families be dissociated from the contamination.

no worker homes have attached garage but house and 2 rental units on business not

The purposes of this public health advisory are to notify the U.S. EPA, the New Jersey State Department of Health, and the public that an imminent and substantial human health threat exists at these sites, and to bring to their attention the ATSDR's concerns and recommendations for the protection of the public health.

Stabler garage

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BACKGROUND

The Agency for Toxic Substances and Disease Registry (ATSDR) received a request from the U.S. EPA for an evaluation of the health threat posed by asbestos contamination in the soil and in one dwelling at the New Vernon Road Site. The contamination was found through a sampling event recommended in the Health Assessment (HA), prepared by the ATSDR, dated April 10, 1989. The sampling was conducted in July 1990 at two of the subsites associated with this site: New Vernon Road Site and White Bridge Road Site.

Analysis of the samples revealed a maximum concentration of 5% by volume chrysotile asbestos in the soil and 2% by volume in a residence. All of the twelve samples collected contained at least 2% by volume chrysotile.

The New Vernon Road Site consists of approximately 30 acres of land off New Vernon Road in Meyersville, New Jersey in Passaic Township. In the late 1960s, asbestos refuse from an asbestos processing plant in Millington was landfilled on the site at two separate locations. These locations are now called the filled pond area and the main landfill area. The refuse consisted of loose asbestos fibers, broken asbestos tiles, and broken asbestos siding.

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The White Bridge Road Site consists of approximately 12 acres in Meyersville. The site is now a horse farm. From 1970 to 1975, wastes similar to those disposed at the New Vernon Road site were landfilled in the eastern portion of the site in and around what has become a riding track.

Both the White Bridge Road Site and the New Vernon Road Site are located in a primarily rural area. A combined total of 15-20 off-site residences are potentially impacted by any migration of the wastes from the two sites. Additional site descriptive information and demographics can be found in the HA.

Asbestos is a group of six naturally occurring fibrous minerals. Asbestos is a known human carcinogen and is one of the primary causes of mesothelioma. Mesotheliomas are tumors arising from the thin membrane surrounding internal organs. Inhalation of asbestos fibers may lead to fibrotic lung disease (asbestosis), cancer of the lung, the pleura, and the peritoneum. There is some evidence that inhalation and ingestion of asbestos fibers may lead to an increased risk of gastrointestinal cancer.

There is a substantial latency period of between ten and thirty years between the exposure and the occurrence of apparent health effects. Some human and animal studies have indicated that adverse effects may occur

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after exposures of limited duration. In order for exposure to occur, the asbestos must exist as free fibers capable of becoming airborne.

The length and diameter of fiber is important in determining the ultimate effect of the exposure. For instance, fibers less than 0.5 micrometers in diameter are most active in producing tumors. However, there is little doubt, based on human epidemiological studies and animal studies, that all types of asbestos, including chrysotile, can cause cancer.

All concentrations of asbestos fibers studied to date have demonstrated an excess cancer risk, as reported in the National Institute for Occupational Safety and Health (NIOSH) Revised Recommended Asbestos Standard. A marked enhancement of the risk of lung carcinoma in exposed workers or populations who also smoke cigarettes has been noted in human epidemiology studies. The ATSDR Toxicological Profile for Asbestos indicates this increased risk may be as high as ten times the nonsmoker risk.

BASIS FOR ADVISORY

There is ample opportunity for human exposure to the chrysotile asbestos at both of these subsites. The respective owners spend a great deal of time in the outdoors, either at the stables or working with equipment, and children play outdoors on site.

ABD 001 2140

Contamination may be brought into the home as well. There h documented incidents in which asbestos workers have carried home on their clothing and on their person. In this situati possible that children and pets which frequent the site may contamination into the home.

The high concentration of asbestos in the soil outside the h represents a serious threat to the occupant's health. Sampl the dwellings on site clearly establish the presence of free fibers in the homes. Continued exposure to free asbestos fi regardless of the concentration, represents an imminent and health threat to exposed individuals.

CONCLUSIONS

Residents on site in the homes with free asbestos fibers fac and substantial health threat from exposure to asbestos. Wo New Vernon Road Site and workers and customers at the horse riding stables at the White Bridge Road Site also face an in of developing adverse health effects. The families of these customers may also be at risk.

RECOMMENDATIONS AND PROPOSED ACTIONS

The ATSDR, in consultation with the New Jersey State Department of Health, will develop criteria, based on exposure, for selection of residents and make available a medical monitoring program to those selected residents.

The ATSDR recommends the following actions be taken to mitigate this health threat:

1. The U.S. EPA should dissociate those residents with free asbestos fibers in the home from the contamination.

2. Additional sampling should be performed by the U.S. EPA to determine if homes adjacent to these sites contain free asbestos fibers caused by off-site migration.

3. Additional sampling should be performed by the U.S. EPA in the homes of workers and customers of the businesses located at these sites.

4. The U.S. EPA should post warning signs in the vicinity of the horse track at the White Bridge Road Site to advise customers of the hazards at the site.

5. The U.S. EPA or the property owners should restrict access, authorized or unauthorized, to those areas known to be contaminated with asbestos.

6. The U.S. EPA or the property owners should eliminate activities which tend to increase airborne particulates in those areas known to be contaminated with asbestos.

For additional information, please contact the ATSDR at the following address:

Robert C. Williams, P.E.
Director, Division of Health Assessment and Consultation
Agency for Toxic Substances and Disease Registry
1600 Clifton Road, NE, MS E-32
Atlanta, Georgia 30333
(404) 639-0610
FTS 236-0610

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service
Agency for Toxic Substances
and Disease Registry

Memorandum

Date August 29, 1990

From Arthur Block AB
ATSDR Regional Representative

Subject Asbestos Dump Site: Morris County, New Jersey
ATSDR Health Review and Comment

To Ms. Kathleen Callahan
Deputy Director, ERRD, EPA Region II

On August 22, 1990 the Environmental Protection Agency (EPA), Region II, requested that the Agency for Toxic Substances and Disease Registry (ATSDR) Region II, review and comment on residential sampling data obtained from a National Priority List (NPL) site located in Morris County, New Jersey, named Asbestos Dump Site (ADS). EPA's Field Investigation Team (F.I.T) had taken soil and household samples in and around two of A.D.S. operable units (o.u.); the Mt. Vernon Road Site (MVR) and the White Bridge Road Site (WBR).

The F.I.T. investigation discovered elevated levels of chrysotile asbestos (5%) in driveways and soil samples in and around the residential roads and pathways of both the MVR and WBR Sites. Additionally, 5% levels of asbestos was found in the horse track area of the WBR Site and a 2% level of chrysotile asbestos was found in a dust sample taken from the Tielman Household's vacuum cleaner located in the MVR Site.

Recommendations:

In consultation and agreement with the Emergency Response Branch (ERB) of ATSDR, ATSDR, Region II recommends the following:

(1) ATSDR concludes that at the reported levels of asbestos found, that we recommend A.D.S. an Immediate and Significant Health Threat.

(2) ATSDR further recommends that the occupants of the Tielman household located adjacent to the MVR Site be Immediately and Temporarily Relocated.

(3) ATSDR recommends that the residential houses in the immediate vicinity of the MVR and WBR Sites be immediately sampled for the presence of asbestos. Results to be forwarded to ATSDR for review and comment.

Kathleen Callahan
Deputy Director

August 29,

Follow-up:

On April 10, 1989 ATSDR released a Health Assessment c
Asbestos Dump Site. ATSDR will prepare an addendum tc
Health Assessment stating the above recommendations ar
shortly release a Preliminary Health Advisory on this

Please direct any questions or comments of this revie
Arthur Block (212-264-7662) or Lisa Voyce (264-7662),
Representatives, ATSDR, Region II.

cc: Constantine Sidamon-Eristoff
William J. Muszynski
Richard Caspe
Richard Salkie
Sharon Jaffers
Nick Margripolis
Mike Ferriola
Pat Seppi
George Buynoski
Richard Nickle
Suzanne Simon
Jonathan Savrin
Jim Pasqualo
Gregory Ulirsch

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service
Centers for Disease Control

Memorandum

Date .September 14, 1990

From Environmental Health Scientist, Emergency Response and Consultation Branch, Division of Health Assessment and Consultation, ATSDR (E32)

Subject Addendum Asbestos Disposal Sites NPL Site
Millington (Morris County), New Jersey

To Arthur Block
Public Health Advisor
ATSDR Regional Services
Region II
Through: Director, DHAC, ATSDR (E32)
Chief, RPB, DHAC, ATSDR (E32)
Chief, ERCB, DHAC, ATSDR (E32)

Attached is an addendum to the Asbestos Disposal Sites NPL Site Health Assessment. The addendum is based on a review of the analytical results of soil and residential dust sampling. These samples were collected by the Environmental Protection Agency (EPA) in July 1990 in response to a recommendation contained in the ATSDR Health Assessment. The results indicated that soil at two subsites contained high concentrations of chrysotile asbestos (5% by volume) and at least one dwelling was contaminated by high levels of chrysotile asbestos (2% by volume). The two subsites addressed in this addendum are the New Vernon Road Site and the White Bridge Road Site in Passaic Township, New Jersey. The addendum is not applicable to any other subsite associated with this NPL site.

Please contact me if you have any questions regarding this addendum

Richard A. Nickle
Richard A. Nickle

Asbestos Disposal Sites NPL Site

Morris County, Millington, New Jersey

CERCLIS NO. NJD980654149

Addendum to the Health Assessment

BACKGROUND AND STATEMENT OF ISSUES

The Agency for Toxic Substance and Disease Registry (ATSDR) received a request from the U.S. Environmental Protection Agency (EPA) for an evaluation of the health threat posed by asbestos contamination in the soil and in residences at the Asbestos Disposal Sites NPL Site. The contamination was found as a result of sampling recommended in the Health Assessment (HA), prepared by ATSDR, dated April 10, 1989. Twelve samples were collected in July 1990 at two of the subsites associated with this site: New Vernon Road Site and White Bridge Road Site.

Analysis of the samples revealed a maximum concentration of 3% by volume chrysotile asbestos in the soil and 2% by volume in a residence. The residential sample was collected from the occupant's vacuum cleaner bag. All of the twelve samples collected contained at least 2% by volume chrysotile. No other type of asbestos fibers were reported at these subsites.

On the New Vernon Road Site seven samples were collected. The samples were collected in one of two dwellings, in a small garage, along a dirt road leading between the two buildings to the main disposal area, and along a dirt path bordering the disposal area. At the White Bridge Road Site, five samples were collected. These sample were collected on or near the riding track and the dirt path leading up to the track.

The New Vernon Road Site consists of approximately 30 acres of land off New Vernon Road in Meyersville, New Jersey, in Passaic Township. In the late 1960s, asbestos refuse from an asbestos processing plant in Millington was landfilled on the site at two separate locations. These locations are now called the filled pond area and the main landfill area. The refuse consisted of loose asbestos fibers, broken asbestos tiles, and broken asbestos siding. Previous investigations detected asbestos waste in the pond area in front of the residence, the main landfill, the dirt road, and in the vicinity of a shed near the residence. The property owner, his wife and two children, and one adult tenant live on the site. The owner employs approximately 3 other persons in his on-site business. These workers spend part of each workday on site.

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The White Bridge Road Site consists of approximately 12 acres in Meyersville. The site is now a horse farm. From 1970 to 1975, wastes similar to those disposed of at the New Vernon Road site were landfilled in the eastern portion of the site in and around what has become a riding track. Asbestos contamination has been found on the riding track, the dirt path leading to the riding track, and in the adjacent grazing field. The property owner and his wife live on the site. The horse farm and it's associated riding track is a commercial enterprise employing approximately three individuals besides the owner. These employees work on site.

Both the White Bridge Road Site and the New Vernon Road Site are located in a primarily rural area. A combined total of 15-20 off-site residences are potentially impacted by off-site migration of the wastes. Additional site descriptive information and demographics can be found in the HA.

Follow-up sampling by the Environmental Protection Agency in August 1990 found loose fibers of chrysotile asbestos in the dust in several residences with diameters ranging from 0.02 um to 0.2 um. The concentration of asbestos in the dust was reported as less than 1% by volume in all samples. These dust samples were collected in areas where contamination was expected to be found as recommended by the ATSDR. These data have not undergone quality assurance review and should be considered preliminary.

DOCUMENTS AND INFORMATION REVIEWED

Health Assessment for Asbestos Disposal Site. Prepared by Agency for Toxic Substances and Disease Registry. April 10, 1989.

Revised Recommended Asbestos Standard. Prepared by National Institute for Occupational Safety and Health. December 1976.

Draft Toxicological Profile for Asbestos. Prepared by Agency for Toxic Substances and Disease Registry. February 16, 1990.

Excerpts from Sampling Report: New Vernon Road Site and White Bridge Road Site, Asbestos Dump Sites. Prepared by Fred C. Hart Associates, Inc., Subcontractor to Roy F. Weston, Inc. Prepared for: U.S. Environmental Protection Agency, Region II. Undated.

Conference Call between Agency for Toxic Substances and Disease Registry, Division of Health Assessment and Consultation, Emergency Response and Consultation Branch; Public Health Advisor, Agency for Toxic Substances and Disease Registry, Region II; and, New Jersey Department of Health. August 21, 1990. Refer to ERCB Superfund Record of Communications dated August 27, 1990.

Conversation between Mr. Richard Hickle, Agency for Toxic Substances and Disease Registry and Mr. William Howard, Centers for Disease Control. August 30, 1990. Refer to ATSDR Superfund Record of Communications dated August 31, 1990.

Conversation between Mr. Richard Nickle, Agency for Toxic Substances and Disease Registry and Mr. Raymond McQueen, National Asbestos Council. August 30, 1990. Refer to ATSDR Superfund Record of Communications dated August 31, 1990.

Facsimile transmission of preliminary analytical data. Transmitted by: Mr. Arthur Block, Public Health Advisor, Regional Services, Region II, Agency for Toxic Substances and Disease Registry, New York. Transmitted to: Mr. Richard Nickle, Division of Health Assessment and Consultation, Emergency Response and Consultation Branch, Agency for Toxic Substances and Disease Registry. August 5, 1990

DISCUSSION

Asbestos is a group of six naturally occurring fibrous minerals. Asbestos is a known human carcinogen and is one of the primary causes of mesothelioma. Mesotheliomas are tumors arising from the thin membranes surrounding internal organs. Inhalation of asbestos fibers may lead to fibrotic lung disease (asbestosis), cancer of the lung, the pleura, and the peritoneum. There is some evidence that inhalation and ingestion of asbestos fibers may lead to an increased risk of gastrointestinal cancer. In order for exposure to occur, the asbestos must exist as free fibers capable of becoming airborne. There is a substantial latency period of between ten and thirty years between the time exposure first occurs and the occurrence of apparent health effects. Some human and animal studies have indicated that adverse effects may occur even after relatively short periods of exposures.

The length and diameter of fiber is important in determining the ultimate effect of exposure. However, there is little doubt, based on human epidemiological studies and animal studies, that all types of asbestos, including chrysotile, can cause cancer. Chrysotile asbestos was the only form of asbestos fiber identified at these subsites. Diameters of the fibers found were in the range of 0.02 to 0.2 um. Fibers less than 0.5 um in diameter are most active in producing tumors (NIOSH Recommended Standard). Inhalation of chrysotile fibers can also lead to asbestosis, a chronic lung disorder.

All concentrations of asbestos fibers studied to date demonstrated an excess cancer risk, as reported in the NIOSH Recommended Standard. Both the NIOSH Recommended Standard and the ATSDR Toxicological Profile report a marked enhancement of the risk of lung carcinoma in exposed workers or populations who also smoke cigarettes. The Toxicological Profile indicates this increased risk may be as high as ten times the nonsmoker risk.

In making conclusions based on data obtained from vacuum cleaner bag samples, the following factors should be considered:

- The concentration of asbestos in the vacuum bag may reflect higher or lower concentrations than is actually present in the home.
- Although primarily used in the household, many vacuum cleaners are used elsewhere (e.g., cleaning the interior of a car). This introduces other sources of contamination which may skew the analytical results.
- During vacuuming, some fibers may pass through the bag and be exhausted into the ambient air of the home. Thus, the action of the vacuum may increase the potential for exposure by increasing the number of fibers in the air in the breathing zone.

There is, however, ample opportunity for human exposure to the chrysotile asbestos to occur at both of these subsites. The respective owners spend a great deal of time in the outdoors, either at the stables or working with equipment, and children play outdoors on site. Contamination may be brought into the home as well. There have been documented incidents in which asbestos workers have carried contamination home on their clothing and on their person. In this situation, it is possible that children and pets which frequent the site may also carry contamination into the home.

CONCLUSIONS

As described previously, excessive risk has been demonstrated at all fiber concentrations studied as reported by NIOSH in their recommended standard. The high concentration of chrysotile asbestos in the soil outside the homes represent a serious threat to the occupant's health. Therefore, ATSDR concludes as follows:

1. Based on the information available, the residents at both subsites face an imminent and substantial health threat from exposure to asbestos through inhalation and possibly ingestion. Smokers would face an increased risk of asbestos related health effects as compared to non-smokers.
2. A potential health threat also exists for the surrounding population if the friable asbestos on-site migrates off-site.
3. A potential health threat also exists for workers at the New Vernon Road Site and workers and customers at the horse farm and riding stables at the White Bridge Road Site. The families of these workers and customers may be at risk as well.

RECOMMENDATIONS

1. The exposure of the residents on these sites to asbestos should be terminated.

2. The occupants of the dwelling in which the asbestos has been found should undergo medical examination. Periodic examinations after an initial baseline is established should be considered by the attending physician since asbestos exposure has a substantial latency period.

3. Additional sampling in adjacent homes should be undertaken. If dust samples are collected, they should be from relatively inaccessible areas, such as the top of bookshelves and under refrigerators.

4. The data collected during the additional sampling recommended should be evaluated to determine if further action is necessary. ATSDR would be available to perform this evaluation.

5. Access to the sites should be restricted.

6. Activities which tend to generate dust, including horseback riding, should be terminated in areas known to be contaminated with asbestos.

7. Warning signs specifying the exposure risk should be posted in the vicinity of the horse track at the White Bridge Road Site. The signs should remain in place until mitigative efforts alleviate the health threat.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION II

DATE: SEP 11 1990

SUBJECT: Removal Site Evaluation for New Vernon Road Asbestos Millington Dump Site (NPL), Meyersville, New Jersey

FROM: Nick Magriples, On-Scene Coordinator
Removal Action Branch

TO: The File

I. INTRODUCTION

As part of the National Priorities List (NPL) Removal Assessments, the United States Environmental Protection Agency's (U.S. EPA) Removal Action Branch (RAB) has reviewed conditions at the New Vernon Road Asbestos Millington Dump Site (New Vernon Road) for Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Removal Action consideration.

The New Vernon Road Site is a satellite site, of operable unit two, under the NPL project - Asbestos Millington Dump site. The other two satellite sites are the Dietzman Tract and the Whitebridge Road site. Operable unit one is the Millington site.

A release of asbestos to the soil, through past disposal and filling operations, has occurred at the New Vernon Road Site. The driveway at the house, which leads to the main asbestos landfill area at the rear of the property, is covered/paved with pulverized asbestos tile that becomes dusty during dry periods. The homeowner appears to occasionally access this road with large trucks. A dilapidated shed near the house contains asbestos on its dirt floor surface. The probability of asbestos fibers being disturbed by the wind or from contact, and becoming airborne, appears to be high.

The Agency of Toxic Substances and Disease Registry (ATSDR) has verbally issued a preliminary commentary on the health threat, stating that the New Vernon Road Site poses an imminent health threat, and calling for; an immediate, temporary relocation of the residents from their home at the site; medical monitoring of the on-site residents, and additional sampling.

Based on recent analytical data revealing elevated levels of fibrous asbestos in the surface soils, and from dust in the house and the porch (2-5% chrysotile), it is apparent that either a release of asbestos to the air may have occurred and/or is currently occurring at the New Vernon Road site, or the material has been tracked into the home, by the residents of the site. Due to the presence of residents, including two children at the house on the site, and the potential for off-site migration, a removal action should be conducted to relocate the residents and mitigate the potential and existing threats that are posed by the

presence of asbestos in the surface soils and the residential home.

Region 2 Removal Ranking System: 9+

II. PERSONNEL INVOLVED

The following U.S. EPA personnel were directly involved in the Removal Assessment conducted for the New Vernon Road Site: Nick Magriples (201-906-6930) and John Witkowski (201-321-6739) of the RAB, Edison, New Jersey.

III. SITE SETTING

The New Vernon Road Site is located in Meyersville, New Jersey and consists of approximately 30 acres of land off New Vernon Road (see Figure 1). The address is 237 and 257 New Vernon Road. There are two residences either adjacent to or across the street from the site. There is also a tennis club (large ballooned enclosure) directly across the street.

IV. BACKGROUND

The land at the site was used as a corn and dairy cattle farm from 1945 until 1980. However, in the late 1960s, for a period of approximately two years, refuse from National Gypsum was landfilled in two areas at this location. The refuse included loose asbestos fibers, broken asbestos tiles and siding. A small depression in the westernmost corner was filled first. Then a larger depression in the middle of the property was filled. The property was purchased by the current residents in 1980 and, graded and seeded. Currently there are 5 people residing at the site; a husband and wife, each in their mid-thirties; their children, 5 years old and 11 months old; and a female tenant, approximately 35 years of old.

According to the draft Remedial Investigation (RI) report, the New Vernon Road Site contains asbestos wastes in a small landfill area in front of the private residence, in the main landfill area in the center of the property, along the dirt path that traverses north-south along the middle of the property, and in the area of the shed located next to the private residence. The depth of the waste is not known.

The New Vernon Road Site is a satellite site of the NPL Asbestos Millington Dump site. In September 1983, the U.S. EPA Emergency Response and Hazardous Materials Inspection Branch reviewed site conditions for removal eligibility. The site was addressed by the Remedial Response Program through a 106 Order issued by the U.S. EPA on April 4, 1985, which required National Gypsum to perform a Remedial Investigation/Feasibility Study (RI/FS) on the entire Asbestos Dump. Subsequent to issuance of the Order, it

was deemed appropriate to split the work into two operable units. The RI for operable unit two has been conducted (1987), however it has not been approved by the U.S. EPA Remedial Program. Further activities have not been conducted for operable unit two.

In August 1989, the U.S. EPA issued an Interagency Agreement (IAG) with the U.S. Fish and Wildlife Service (U.S. FWS) to provide technical support for the RI/FS for operable unit two.

V. SITE ACTIVITIES/OBSERVATIONS

The RAB conducted a reconnaissance of the site on March 22, 1990 and a site visit, with the U.S. FWS project manager, Sid Mitra and representatives of the U.S. EPA Emergency Response Team (ERT), on June 28, 1990. The purpose of the site visit was to determine what additional sampling would be required, if any, to complete the removal assessment for the site. ERT was present, at the OSC's request, to provide technical assistance for the evaluation.

Based on ERT recommendations, the RAB collected soil and dust samples from the site on August 2, 1990. The soil samples were collected from various points at the surface of the driveway and the shed, and a dust sample was collected from the homeowner's vacuum cleaner. Samples were analyzed for % asbestos content and type of asbestos fiber using the Transmission Electron Microscopy Method (TEM) by International Asbestos Testing Laboratories, Maple Shade, New Jersey (see Materials section below for an explanation of the results). On August 24, 1990, ERT collected a dust sample from within the house on the site and analyzed it for both Phased Light Microscopy (PLM) and TEM.

The majority of the site is grassy and well maintained. The front of the property shows no evidence of the past fill area. The house on the site is located adjacent to the north-south roadway which almost bisects the property (see Figure 2). This road extends to the east approximately 1,000 feet into an open area (main landfill area). The fill area is approximately 200 - 300 feet long. This area is cluttered with tree trunks and logs. Prior to reaching the open area, the road branches to the north, approximately 200 feet, where the owner has a tree servicing business. The business maintains several large trucks and a two story building. Another road exits the property from this operation on the north west corner.

The main road adjacent to the house appears to be well maintained with gravel by the homeowner. However, the condition of the road degrades approximately 50 feet north of the house. At this point, the road has little if any gravel remaining and is white in color from suspect-asbestos material. The asbestos tiles that were placed on the driveway, having been crushed through years of activity on the property, are now either small chips or

completely pulverized. The amount of suspect-asbestos material on the road appears to increase considerably to the north. The road adjacent to the business is well maintained with gravel. At the main landfill area towards the rear of the property, the road is covered with wood chips, making it difficult to visibly distinguish any potential asbestos.

The shed is located approximately 100 feet south of the house. It is a dilapidated old structure, approximately 20 feet by 80 feet, that was present at the site before the current resident purchased the property in 1980. The roof has partially collapsed and there are no doors or windows present. The dirt floor of the shed contains friable asbestos material. The outside walls are covered with asbestos containing shingles, many of which are cracked or broken.

A conversation with the owner revealed that grading and seeding was conducted on the property after it was purchased. Additionally, the gravel roads are maintained as much as possible. Trucks from the business reportedly travel the other road in order to avoid raising the dust from the deteriorated road. The logs in the open area at the rear are reportedly used for either firewood or chips. A truck was noted at this point of the property during the March 22, 1990 reconnaissance of the site. It should be noted that tire tracks were visible on the deteriorated road at the time of the subsequent site visits.

VI. MATERIALS ON-SITE

Samples collected by the RAB confirm visual observations that friable asbestos is present throughout the driveway of the New Vernon Road Site (see Figure 1 for approximate sample locations). Samples BL003 - BL006 indicate 5% chrysotile content in the soil. Sample BL-007 indicates 2% chrysotile. Sample BL-001 collected from the vacuum cleaner revealed 2% chrysotile content in the dust. Sample BL-002 collected from the shed revealed 5% chrysotile content in the soil.

A sample collected by ERT on August 24, 1990 was inconclusive, due to interferences, in revealing fibrous asbestos in the dust from within the house on the site.

Asbestos is designated as a CERCLA hazardous substance under 40 CFR Table 302.4, when it is friable. Friable means that it can be crumbled with hand pressure, and therefore, is likely to emit fibers when disturbed.

VII. THREAT

A release of asbestos to the soil, through past disposal and filling operations, has occurred at the New Vernon Road Site. The driveway at the house, which leads to the main asbestos

landfill area at the rear of the property, is covered/paved with pulverized asbestos tile that becomes dusty during dry periods. The homeowner appears to occasionally access this road with large trucks. A dilapidated shed near the house contains asbestos on its dirt floor surface. The probability of asbestos fibers being disturbed by the wind or from contact, and becoming airborne, appears to be high. Since the RI has not been approved to date, remediation of the site is not scheduled for the near future. Due to the presence of this contaminant source, and its friability, the potential for a release of asbestos to the air in the future will continue to exist and is likely to occur.

An April 1989 ATSDR Health Assessment stated that since the potential exists for the transport of appreciable levels of asbestos, the potential exists for significant exposure to asbestos at concentrations of long-term public health concern.

ATSDR has verbally issued a preliminary commentary on the health threat at the New Vernon Road Site, stating that the site poses an imminent health threat, based on the levels of fibrous asbestos present in the surface soils, and from dust in the house and the porch (2-5% chrysotile). It called for an immediate, temporary relocation of the residents from their home at the site; medical monitoring of the on-site residents, and additional sampling.

Air samples collected during drilling activities for the RI revealed a minimal amount of asbestos (0.032 fibers/cc), site winds were limited (less than 5 mph) during much of the sampling. The standard for asbestos in air, based on an 8-hour-Time Weighted Average (TWA), is 0.1 fiber/cc. Some samples were also taken after a period of rain, which would influence the amount of fibers present.

Asbestos is a general term used to describe minerals that tend to form fibers when they are broken. These minerals are formed under conditions of very high heat and pressure deep in within the earth, and they are resistant to the types of temperatures and pressures found in our environment at the surface. Because their chemical composition is unchangeable, an asbestos mineral will always break into fibers. Large fibers have the potential to break into smaller ones, which eventually results in its reduction to microscopic size. Because of their small size, shape and lightness, these fibers act are more like a gas than a dust.

The most important human exposure pathway for asbestos is the inhalation of respirable asbestos fibers. The ingestion of fibers may also be an exposure pathway of concern for workers or children who may come into contact with site materials. In addition to environmental exposures, the improper handling of

work clothing from on-site workers may also pose a danger Workers can carry the fibers home in their clothing and h expose other family members.

Asbestos exposure may cause two primary classes of healt effects. The first is asbestosis, a non-malignant diseas characterized by a progressive scarring of the lung and p This condition progresses slowly over many decades, and m continue even after the asbestos exposure has ceased. As microscopic scarring builds up, the lungs become stiff ar restricted with thickening in the walls of the breathing The stiffening of the lungs, when severe, can make it di to breathe.

The other major class of asbestos-related health effects mesothelioma and lung cancer after apparently trivial ex asbestos.

All asbestos-related malignancies have a latency period. is a considerable time interval between asbestos exposur when lung cancer, mesothelioma, or the other asbestos-re cancers are seen. This latency period may vary from twe forty years, although some cases may occur earlier.

VIII. CONCLUSIONS

A release of asbestos to the soil, through past disposal filling operations, has occurred at the New Vernon Road The driveway at the house, which leads to the main asbes landfill area at the rear of the property, is covered/pa pulverized asbestos tile that becomes dusty during dry p The homeowner, and his on-site business, appears to occa access this road with large trucks. A dilapidated shed house contains asbestos on its dirt floor surface.

The probability of asbestos fibers being disturbed by th contact, and becoming airborne, appears to be high. Bas this, the ATSDR preliminary commentary on the health thr recent analytical data revealing elevated levels of fibr asbestos in the surface soils and from the house (2-5% chrysotile), and the presence of children living in the removal action should be conducted to mitigate the poter existing threats that are posed by the presence of asbes the surface soils and the residential home. Additionall the RI has not been approved to date, remediation of the not scheduled for the near future.

Based on the final ATSDR Health Advisory, an addendum tc may be required.

IX. RECOMMENDATIONS

Conditions at the New Vernon Road Site meet the criteria for a CERCLA removal action under 40 Code of Federal Regulations (CFR) 300.400 and the National Oil and Hazardous Substances Pollution Contingency Plan. Qualifying criteria include the following:

40 CFR 300.415(b)(2)(i) - Actual or potential exposure to nearby human populations, animals or the food chain from hazardous substances or pollutants or contaminants;

40 CFR 300.415(b)(2)(iv) - High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate;

40 CFR 300.415(b)(2)(v) - Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released;

40 CFR 300.415(b)(2)(vii) - The availability of other appropriate federal or state response mechanisms to respond to the release;

40 CFR 300.415(b)(2)(viii) - Other situations or factors that may pose threats to public health or welfare or the environment.

The following mitigative measures, at a minimum, are recommended for the New Vernon Road Site:

- the residents of the home at the site should be temporarily relocated;

- all roads should be paved or covered in some manner;

- the shed near the house should be demolished, using appropriate asbestos removal procedures;

- the floor of the shed should be paved or covered in some manner;

- the main landfill area at the rear of the property should be covered, and made off limits to the homeowner and the on-site business, in some manner;

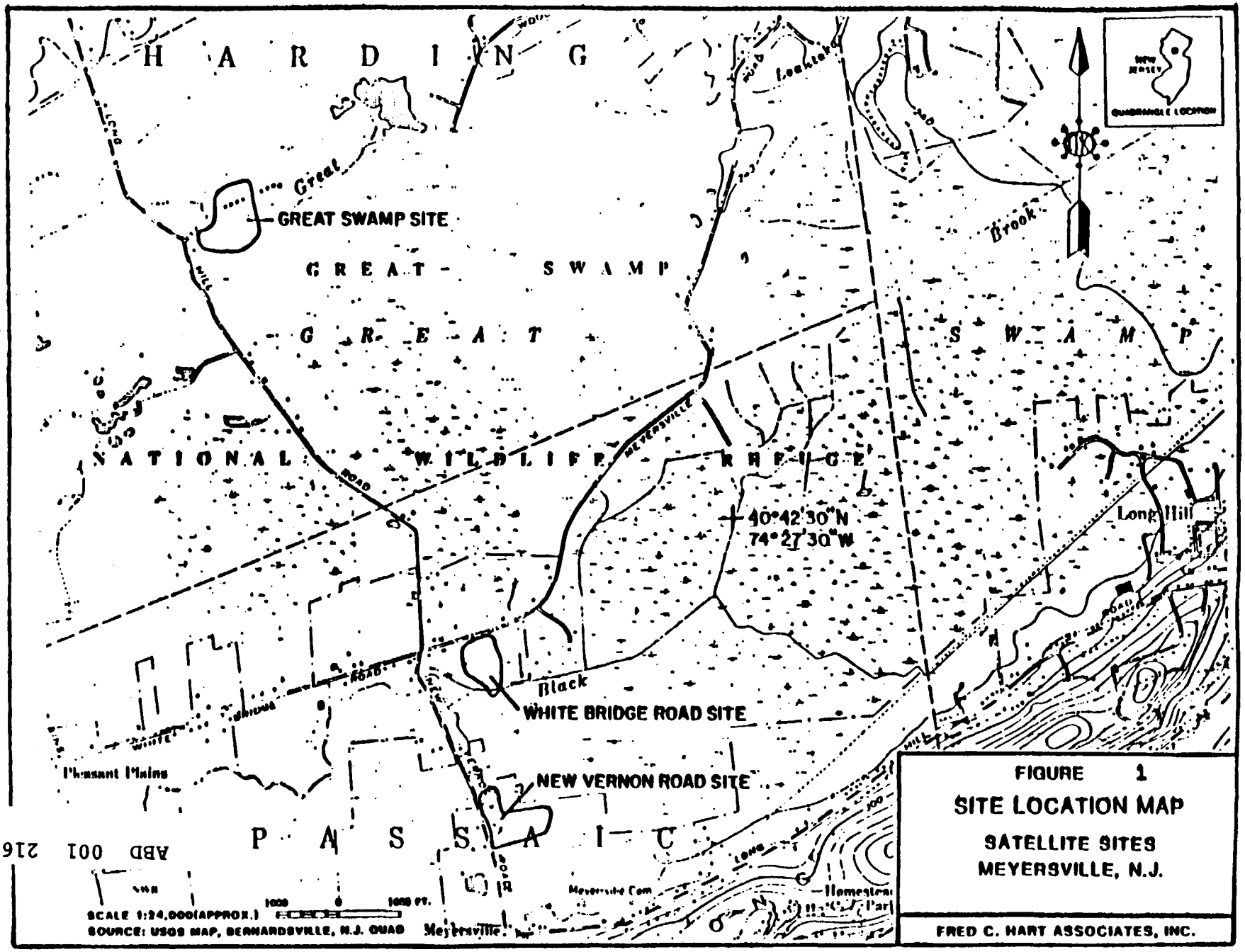
- the grassy area of the property that the homeowner regularly cuts should be investigated further with sampling and a determination made on the need for any mitigation;

- the asbestos contamination in the home(s) at the site, as well as for all of the contents of the homes, should be properly mitigated, followed by intensive air sampling to determine completion of task;

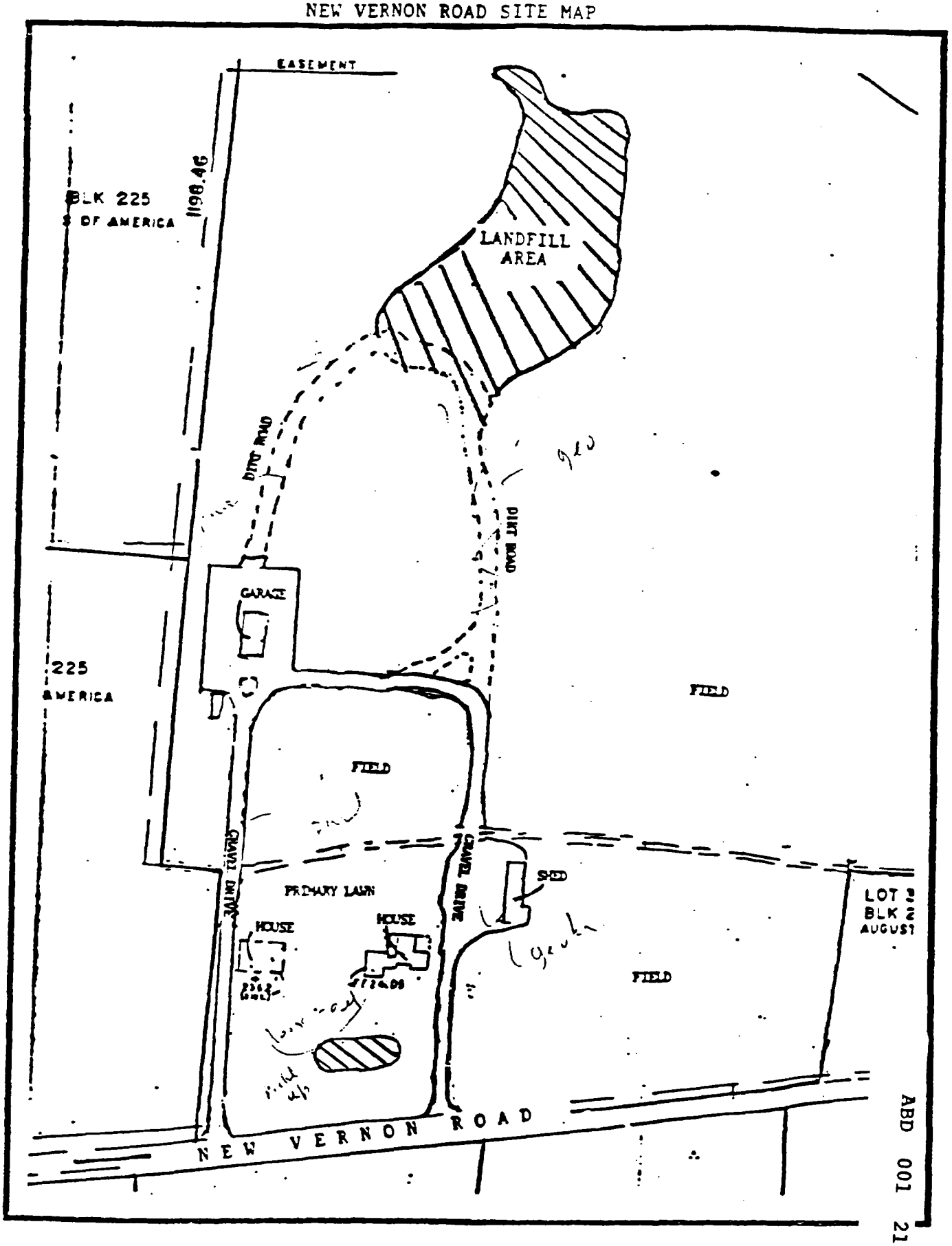
- further sampling and analysis may be warranted to establish any additional or more extensive mitigative measures, eg., the main landfill area.

Although remedial alternatives have not been established, the removal action should consider, to the extent possible, potential long term remedial actions when developing the scope of work. Although the conditions at the site appear to have been in existence for some time, an expedited time critical response is appropriate for the New Vernon Road Site based on the exigency of the circumstances at the site.

cc. G. Zachos
J. Witkowski
M. Ferriola
M. Neill


H A R D I N G
GREAT SWAMP SITE
G R E A T S W A M P
G R E A T
S W A M P
NATIONAL WILDLIFE REFUGE
40°42'30"N
74°27'30"W
Long Hill
Black
WHITE BRIDGE ROAD SITE
NEW VERNON ROAD SITE
Pleasant Plains
P A S S A I C
SCALE 1:24,000(APPROX.)
SOURCE: USGS MAP, BERNARDSVILLE, N.J. QUAD
Meyersville
FIGURE 1
SITE LOCATION MAP
SATELLITE SITES
MEYERSVILLE, N.J.
FRED C. HART ASSOCIATES, INC.

NEW VERNON ROAD SITE MAP



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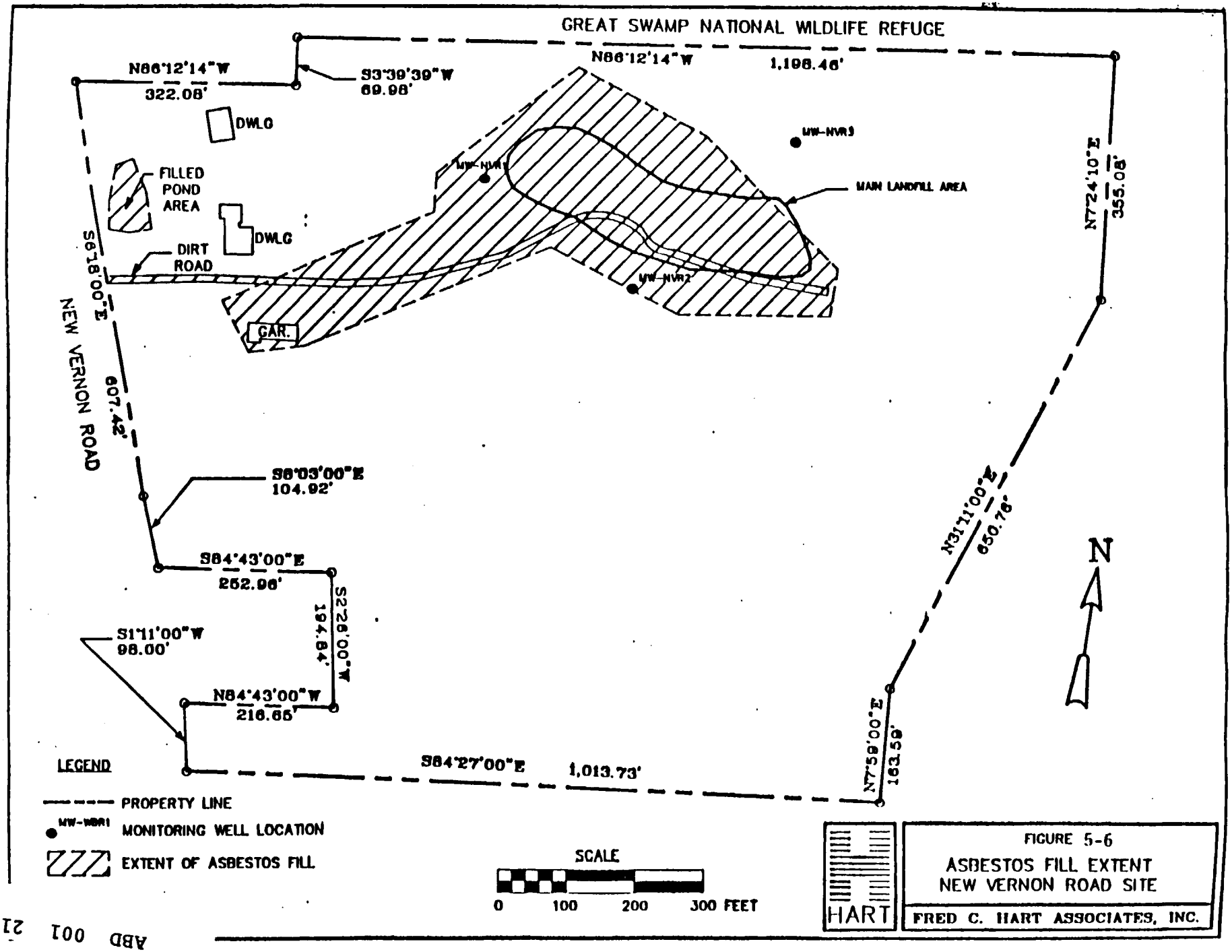
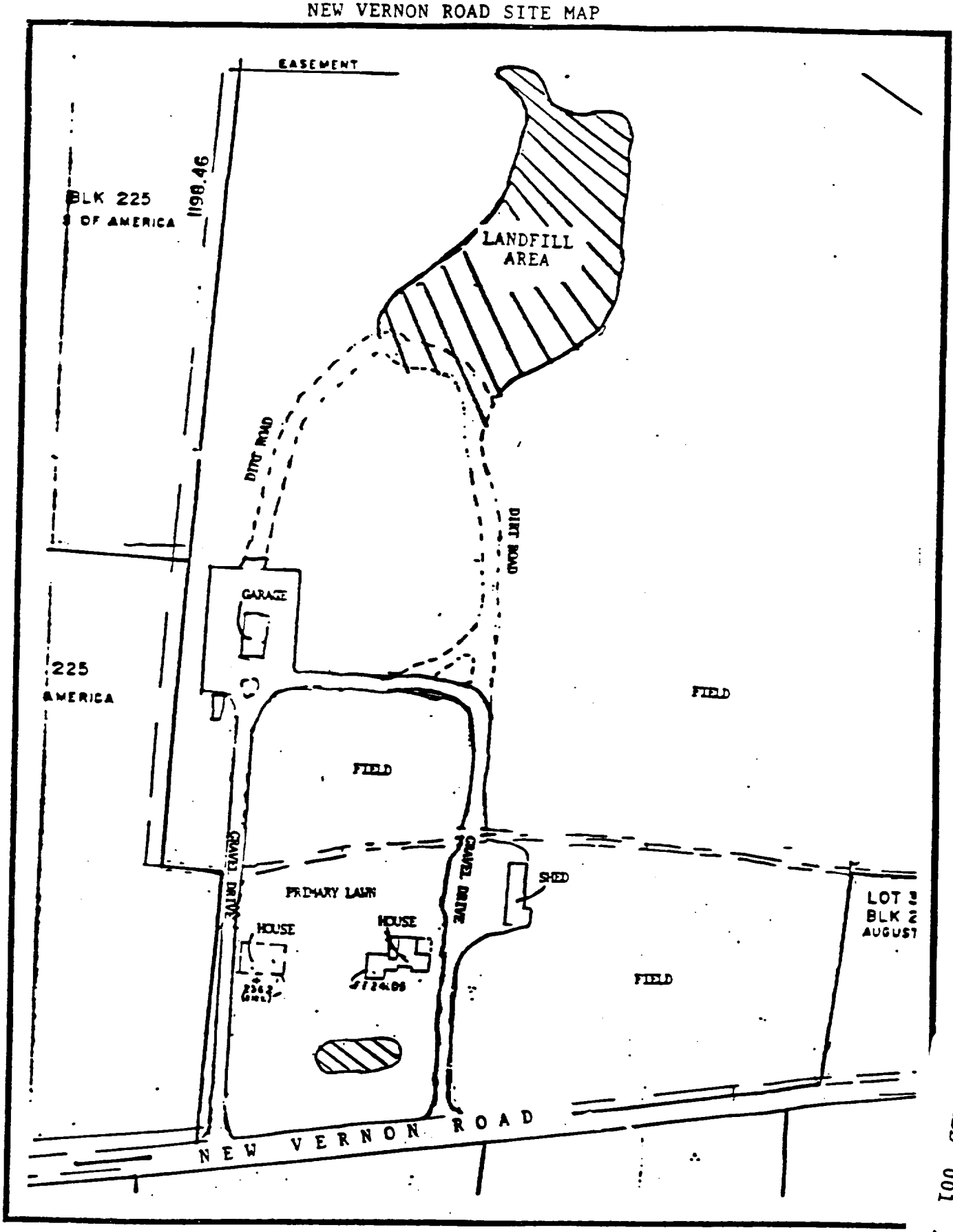

GREAT SWAMP NATIONAL WILDLIFE REFUGE
N86°12'14"W
322.08'
S3°39'39"W
69.98'
N86°12'14"W
1,196.46'
DWLG
FILLED
POND
AREA
DWLG
DIRT
ROAD
MW-NVR3
MW-NVR1
MAIN LANDFILL AREA
MW-NVR2
CAR.
S6°18'00"E
NEW VERNON ROAD
607.42'
N7°24'10"E
355.08'
S6°03'00"E
104.92'
S84°43'00"E
252.96'
S2°26'00"W
194.84'
S1°11'00"W
98.00'
N84°43'00"W
216.65'
N31°11'00"E
650.78'
N7°58'00"E
183.59'
S84°27'00"E
1,013.73'
N
LEGEND
PROPERTY LINE
MW-NVR1 MONITORING WELL LOCATION
EXTENT OF ASBESTOS FILL
SCALE
0
100
200
300 FEET
HART
FIGURE 5-6
ASBESTOS FILL EXTENT
NEW VERNON ROAD SITE
FRED C. HART ASSOCIATES, INC.

NEW VERNON ROAD SITE MAP



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